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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/072,784	05/06/1998	BARIN GEOFFRY HASKELL		6905

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EXAMINER

CHEN, WENPENG

ART UNIT	PAPER NUMBER
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2624

DATE MAILED: 11/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/072,784

Applicant(s)

HASKELL ET AL. 

Examiner

Wenpeng Chen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) 1-28, 31-33 and 36-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 29-30, 34-35, 39-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

Examiner's responses to Applicant's remark

1. Applicants' arguments filed on 9/18/2002 have been fully considered but they are not persuasive. The Examiner has thoroughly reviewed Applicants' arguments but firmly believes that the cited reference to reasonably and properly meet the claimed limitation.

2. Applicants are reminded that the Examiner is entitled to give the broadest reasonable interpretation to the language of the claims. So the Examiner considers Suzuki's video_object_layer_id assigned to each layer as lower layer or upper layer to be Applicants' assigned priorities within the broad meaning of the term. The Examiner is not limited to Applicants' definition which is not specifically set forth in the claims. In re Tanaka et al., 193 USPQ 139, (CCPA) 1977.

Applicants' argument -- Suzuki's video_object_layer_id are not the priority to each VOL recited in Claim ²⁹39. The priority recited in Claim ²⁹39 is useful for permitting important data to be scheduled ahead. Furthermore, no term "priority" appears in Suzuki's patent.

Examiner's response -- The Examiner likes to point out that the feature of priority for "permitting important data to be scheduled ahead" is not recited in Claim ²⁹39.

The Suzuki's video_object_layer_id provides indication of priority during decoding process. As shown in Fig. 29 and in column 28, lines 13-50, Suzuki specifically teaches:

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"Additionally, the lower layer decoding unit 95 furnishes information for encoding the upper layer VOP such as the size data FSZ_B, offset data FPOS_B, motion vector MV, prediction mode and/or the flag COD, obtained on decoding the lower layer bitstream, to an upper layer decoding unit 93. The upper layer VOP bitstream from the demultiplexer 91 is delayed in a delay circuit 92 by a delay time corresponding to the processing time in the lower layer decoding unit 95 and then supplied to the upper order decoding unit 93. The upper layer decoding unit 93 decodes the upper layer bitstream furnished via the delay circuit 92 by utilizing the outputs of the lower layer decoding unit 95 and the resolution converter 94, if need be, and outputs the resulting upper layer decoded picture, key signal, size data FSZ-E, and offset data FPOS-E."

As indicated above, the lower layer bit stream is decoded to produce information needed for decoding the upper layer. In other word, the lower layer can be decoded independently, but the upper layer cannot. Therefore, video_object_layer_id, for lower layer or upper layer, that provide indication of decoding priority are assigned priorities. Unless the priority recited in Claim 39 is further limited, the Examiner considers Suzuki teaches this feature.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

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29-30
4. Claims 39-40 are rejected under 35 U.S.C. 102(e) as being anticipated by Suzuki et al. (US patent 6,097,842 cited previously.)

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For Claim 39, Suzuki teaches a method of prioritizing encoded video data stream, the method comprising:

- identifying a video object (VO) from a video data; (Fig. 32)
- coding time instances of video object as a plurality of coded object planes (VOPs); (Fig. 32)
- assigning each of the VOPs to one of a plurality of video object layers (VOLs) for the video object based on information content of the VOPs; (Fig. 32)
- assigning priorities to video object layers (VOL); (column 31, lines 9-27; The video_object_layer_id is assigned to each layer as lower layer or upper layer.)
- transmitting each VOL by: (1) transmitting an identifier of the VOL's priority and (2) transmitting VOPs of the VOL. (column 31, line 29 to column 33, line 49; Figs. 32-37; column 31, lines 9-27 and 47-50; The video_object_layer_id is transmitted.)

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For Claim 40, Suzuki further teaches:

- a flag, having a length of one bit that, when set to "1" indicates that priority is specified for the VOL; (column 31, lines 41-46; The one-bit flag scalability indicates whether priority is set or not.)

- a field, having a length of three bits, taking value between 1 and 7, where 1 represents a highest priority and 7 represents a lowest priority. (column 31, lines 9-27; The number of scalable layers can be greater than 3. Therefore, Suzuki also teaches a case that has 7 scalable layers. For the case, 3 bits are needed for specifying video_object_layer_id.)

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 34-35 and 39-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US patent 6,097,842 cited previously) in view of Chang et al. (US patent 6,025,877 cited previously.)

Suzuki teaches a method of prioritizing encoded video data stream, the method comprising:

- identifying a video object (VO) from a video data; (Fig. 32)
- coding time instances of video object as a plurality of coded object planes (VOPs); (Fig. 32)
- assigning each of the VOPs to one of a plurality of video object layers (VOLs) for the video object based on information content of the VOPs; (Fig. 32)
- assigning priorities to video object layers (VOL) associated with the video data stream; (column 31, lines 9-27; The video_object_layer_id is assigned to each layer as lower layer or upper layer.)

-- adding priority data for each video object layer to the video streams; (column 31, lines 9-27 and 47-50; The video_object_layer_id is transmitted. It indicates that priority data are added to the streams.)

-- wherein the indication of the priority of the VOL is optional; (column 31, lines 41-46; The one-bit flag scalability indicates whether priority is set or not.)

-- transmitting each VOL by: (1) transmitting an identifier of the VOL's priority and (2) transmitting VOPs of the VOL; (column 31, line 29 to column 33, line 49; Figs. 32-37; column 31, lines 9-27 and 47-50; The video_object_layer_id is transmitted.)

-- a flag, having a length of one bit that, when set to "1" indicates that priority is specified for the VOL; (column 31, lines 41-46; The one-bit flag scalability indicates whether priority is set or not.)

-- a field, having a length of three bits, taking value between 1 and 7, where 1 represents a highest priority and 7 represents a lowest priority. (column 31, lines 9-27; The number of scalable layers can be greater than 3. Therefore, Suzuki also teaches a case that has 7 scalable layers. For the case, 3 bits are needed for specifying video_object_layer_id.)

However, Suzuki does not teach the transmitting step recited in Claims 34 and 39.

Chang teaches a method of encoding a video data stream comprising the steps of:

-- assigning a priority to VOL data for the case there is only one single VOL of each video object; (Fig. 2, element 21; column 3, lines 10-26)

-- wherein information related to the single VOL data having a high priority is transmitted before information related to VOL data having a low priority; (column 3, lines 57-67)

-- (a) the priority data identifies which VOL layer may be discarded in the event of (a1) limited memory or processor resources, (a2) channel errors and (b) determining whether transmission conditions permit transmission of all VOLs of the video object; (column 3, lines 32-40, 58-64; Fig. 5; Fig. 5 teaches to transmit parts of information according to the priority and according to various conditions. A low current transmission speed is an indicator of channel congestion that causes channel error. The transmission speed in a network assigned to the system is varied. When the speed is reduced, the channel bandwidth is lost. It is also representing a limitation to the overall process resource of the receiving part.)

- if, not, discarding a lowest priority VOL and transmitting remaining VOL data. (As shown in Fig. 5, Chang teaches a case that the $(TxSetSize + ObjSize(\text{lowest priority}))$ becomes larger than egs . In that case the lowest priority VOL is discarded.)

It is desirable to provide high quality of video services. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to apply Chang's teaching to transmit Suzuki's VOLs and priority data to a decoder according to the assigned priority of each VOL, because the combination proves scalable transmission to minimize the effect variable transmission speed for optimizing the quality of transmitted data.

For Claim 44, both Suzuki and Chang teach a method of decoding encoded video data stream generated in their respective coding method. (Fig. 2 of Chang; Fig. 27 of Suzuki) As discussed above, the priority data identifies which VOL layer may be discarded in the event of limited memory or processor resources in the coding process, the combination also meets the limitation of the method of decoding recited in Claim 44.

Conclusion

7. THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). The Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for response to this final action is set to expire THREE MONTHS from the date of this action. In the event a first response is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for response expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wenpeng Chen whose telephone number is 703 306-2796. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K Moore can be reached on 703 308-7452. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications. TC 2600's customer service number is 703-306-0377.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-4700.

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Wenpeng Chen
Examiner
Art Unit 2624

November 21, 2002

A handwritten signature in cursive script, appearing to read "Wenpeng Chen".